CHAPTER 3

WATERSHED SUMMARIES

The 30 watersheds in the County have been subdivided into 14 groups for reporting purposes. This was done based on characteristics of area, geography and, in most cases, physiographic province and proximity of watersheds to each other.

Summaries for each watershed include a map of land cover and a brief description of generalized patterns in development. Also included are graphical depictions of primary land uses based upon 30 square-meter Landsat thematic mapper data collected in 1992. The National Land Cover Data Key (NLCD) was the basis for classifying the various land use categories (see Vogelmann et al., 1988). It should be noted that the two classes of residential development specified in the graphic, "High Intensity" versus "Low Intensity," are largely measures of communities with multi- versus single-family dwellings, respectively. These should not be confused with references in the text to low-, moderate-, and high-*density* development, terms frequently used to highlight current levels of imperviousness within subwatersheds. Definitions of land use categories are as follows:

Open Water – All areas of open water; typically 25 percent or greater cover of water (per $30m^2$ pixel).

Low Intensity Residential – Includes areas with a mixture of constructed materials and vegetation. Constructed materials account for 30 to 80 percent of the cover. Vegetation may account for 20 to 70 percent of the cover. These areas most commonly include single-family housing units. Population densities will be lower than in high intensity residential areas.

High Intensity Residential – Includes highly developed areas where people reside in large numbers. Examples include apartment complexes and row houses. Vegetation accounts for less than 20 percent of the cover. Constructed materials account for 80 to 100 percent of the cover.

Commercial/Industrial/Transportation – Includes infrastructure (e.g.) roads, railroads, ect.) and all highly developed areas not classified as High Intensity Residential.

Barren (exposed) – Areas characterized by bare rock, gravel, sand, silt, clay, or other earthen material, with little or no "green" vegetation present regardless of its inherent ability to support life. Vegetation, if present, is more widely spaced and scrubby than that in the "green" vegetated categories; lichen cover may be extensive.

Forested Upland – Areas characterized by tree cover (natural or semi-natural woody vegetation, generally greater than 6 meters tall); tree canopy accounts for 25 to 100 percent of the cover.

Pasture/Hay – Areas of grasses, legumes or grass-legume mixtures planted for livestock grazing or the production of seed or hay crops.

Wetlands – Areas where the soil or substrate is periodically saturated with or covered with water as defined by Cowardin et al.

The data tables for each watershed include rankings for the four major components of the overall composite site condition rating (IBI, Habitat Score, Fish Taxa Richness and Current % Impervious Surfaces) as well as Projected % Impervious Surfaces. Both Fish Taxa Richness rankings (High, Moderate, Low and Very Low) and Current % Impervious Surfaces were classified on a 5-category scale (Very Poor, Poor, Fair, Good and Excellent). A taxa table including all fish species found in the watershed groups and the number of sites where they were found is also included.

Where appropriate, a map of volunteer monitoring sites and data description has been included.

A map of the management category designations is included in each watershed group summary. The management groups are drawn from the individual composite ratings in the Data Summary Table and other factors discussed in the Management Categories of the Methods chapter.

Included in some Watershed Group Summaries are descriptions of other programs or initiatives that are currently going on in those watersheds.

The fish depicted throughout the chapter represent species found within Fairfax County. The color plates are courtesy of the New York State Department of Environmental Conservation. Biological profiles were compiled from Jenkins and Burkhead (1994). Insect color plates are courtesy of Dr. Reese Voshell.

As described in Chapter 2, estimates of future imperviousness for the individual watersheds were developed using County zoning information. It is important to note that these values reflect future development *potential*, and are used here only as a general, conservative framework for guiding the prioritization of County watersheds. There are several factors that may contribute to over and under estimations of future imperviousness based on zoning information including:

- Site conditions (e.g. soils and slopes) which prevent a parcel from being fully developed.
- Protected resources such as parks, Resource Protection Areas, wetlands and floodplains that also reduce the developable area.
- Differences between zoning and the County's Comprehensive Plan.

CHAPTER 3